

IN THE ABSTRACT

Please substitute the following Abstract for the Abstract contained in the application.

---Abstract of the Disclosure

It is possible to detect a reception signal at a high speed. A wave detection device includes: a first signal output unit for outputting a first signal $s[n]$ which is a sum of a digital input signal subjected to A/D conversion and an output from a feedback signal output section; a second signal output unit for outputting a second signal $s[n-1]$ which is the first signal $s[n]$ delayed by one sampling timing; and a feedback signal output section for subjecting the second signal $s[n-1]$ to a predetermined calculation. When $n = N-1$, a frequency region conversion section reads out the first signal $s[N-1]$ and the second signal $s[N-2]$ from registers and subjects them to a predetermined calculation, thereby obtaining the input signal subjected to DFT. Since the wave detection device has a simple configuration, it is possible to rapidly detect the reception signal which is an input signal of the wave detection device.